



Isolated Transmitters



150i Series

DC Current Input

Input Range

4 to 20mA DC

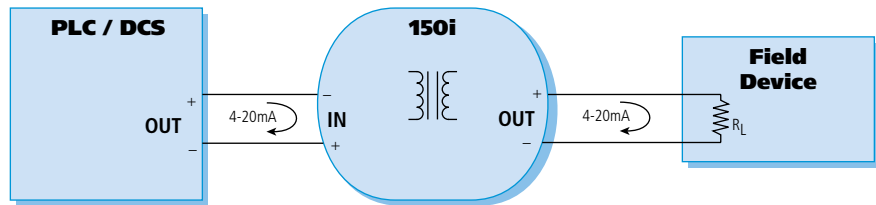
Output Range

4 to 20mA DC

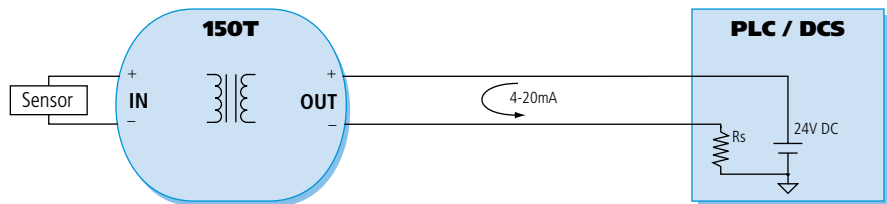
Power requirement

Loop-powered, 4.5V DC + (0.02 x R_{LOAD})
(power is derived from the input signal current).
10V DC @ 250 ohm output load.

150i Isolator Diagram



150T Isolator Diagram



For more information about the 150T Transmitter, refer to Page 180.

Description

The 150i accepts a process current input and provides an isolated process current output signal. Power is received from the input signal current.

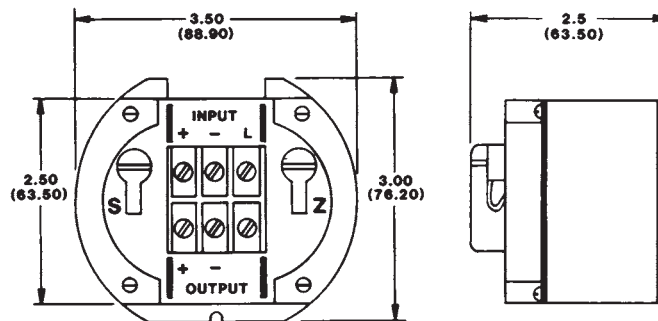
These isolators provide a quick and easy solution for ground loop problems. They are ideal for use with four-wire transmitters to isolate the load from the transmitting device.

Series 150i isolators are ideal for remote or control room mounting. They feature rugged construction and remain stable even in harsh industrial environments.

Special Features

- Excellent accuracy and stability ensure reliable measurements in harsh industrial environments.
- RFI and EMI resistance minimize the effects of noise.
- Isolated inputs prevent ground loops.
- Zero and span adjustment enable precise calibration.

150i Dimensions



Dimensions are in inches (millimeters).



■ Performance

Reference Test Conditions

Input/Output: 4 to 20mA, output load: 250 ohm, 77°F (25°C).

■ Input

Input

4 to 20mA input; input voltage drop is equal to output voltage drop plus (+) the burden voltage. Input current should be limited to less than 50mA.

Voltage Drop (at 20mA). = $4.8V + 0.02A \times R_{LOAD}$

■ Output

Output

4 to 20mA DC output, into 10 to 300 ohms.

Accuracy

±0.05% of output span. Error includes combined effects of isolator repeatability, hysteresis, terminal point linearity and adjustment resolution.

Output Ripple

Less than 0.1% of span.

Response Time

For a step input the output reaches 98% of output span in 200ms typical.

Load resistance effect

Less than ±0.004% of output span per 10 ohm change.

■ Power

External Power

Power to operate the loop-isolator is derived from the input signal loop.

■ Environmental

Isolation

Input and Output circuits are isolated from each other for common-mode voltages up to 250V AC or 354V DC off ground on a continuous basis (will withstand 1500V AC dielectric strength test for 1 minute without breakdown), complies with test requirements outlined in ANSI C39.5-1974 for the voltage rating specified.

Ambient Temperature Range

-15 to 185°F (-25 to 85°C).

Ambient Temperature Effect

Less than ±0.01% of span per °F (±0.018% per °C).

Noise Rejection

Common Mode: 118 dB at 60 Hz 250 ohm unbalance, typical.

RFI Resistance

Less than ±0.5% of output span with RFI field strengths up to 10V/meter at frequencies of 27, 151 and 467 MHz. Designed to comply with SAMA PMC 33.1 (1978) Class 2-abc.

EMI Resistance

Less than ±0.25% of output span effect with switching solenoids or commutator motors.

Surge Withstand Capability (SWC)

Input/Output terminations rated per ANSI/IEEE C37.90-1978. Unit is tested to a standardized test waveform that is representative of surges (high frequency transient electrical interference), observed in actual installations.

■ Physical

Case

Self-extinguishing polypropylene UL94 V-0, recognized by CSA, color blue.

Printed Circuit Boards

Military grade FR-4 epoxy glass circuit board.

Connections

Barrier-type terminal strip using No. 6 screw & clamp plates. Wire range 12-26 AWG.

Environmental Protection

Water resistant enclosures, PC Boards are coated with fungus resistant acrylic conformal coating. Gasket material: silicon rubber.

Mounting Position Effect

Position insensitive.

Shipping Weight

One (1) pound (0.45 kg.) packed.

■ Ordering Information

Transmitter Model

150i-20-i-20

Transmitter, DC current input.

Accessories

Power supplies

See Power Supplies on page 213.

150T-N4

NEMA 4 enclosure, water-tight.

150T-N12

NEMA 12 enclosure, oil-tight.

150T-XJSM-WM

150T-XJSM-PM

Explosion-proof enclosure (-WM for wall-mount or -PM w/pipe-mount hardware).

150T-SM-3.5

150T-SM-24

Mounting rail, 3.5" (holds one 150T) or 24" long.

150T-MSM

Metal surface mounting bracket.

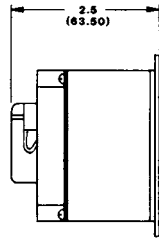
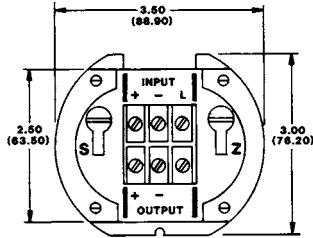
150T-DRA

DIN rail adapter.

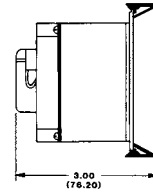
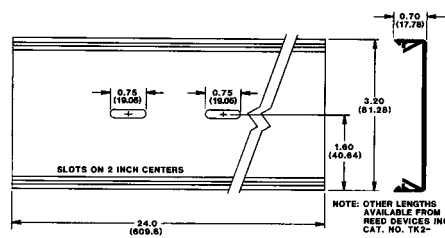


100T, 150T, 150I Dimensions

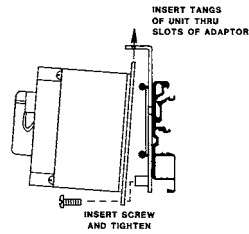
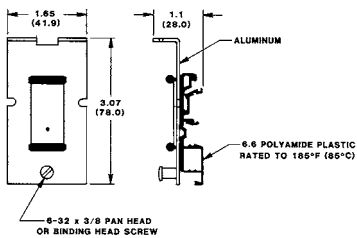
100T/150T/150I Housing



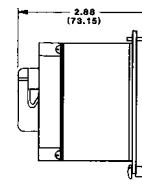
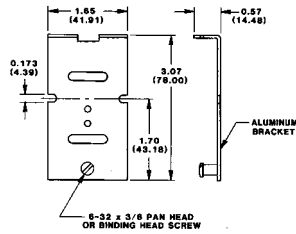
150T-SM-24 Mounting Rail



150T-DRA Adapter



150T-MSM Bracket



150T-N4, NEMA4 150T-N12, NEMA12

